

Report of slipper lobster *Scyllarides brasiliensis* Rathbun, 1906 (Decapoda: Scyllaridae) in the Great Amazon Reef System, Pará, Brazil

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ABSTRACT

The slipper lobster *Scyllarides brasiliensis* Rathbun, 1906 (Scyllaridae Latreille, 1825) has a broad distribution in Western Atlantic, however with disjoint records in coastal zones between 20 and 40 m, associated in bottoms of gravel and coral reefs. From Brazilian waters, this species has been recorded from States of Maranhão to Bahia and with sporadic records in States of São Paulo and Santa Catarina. Based on that, herein we report the northernmost record of *S. brasiliensis* in Brazil and its first observation from the Great Amazon Reef System (GARS). A male specimen was collected through the lobster fishing boat (commercial fishing) in State of Pará (01°23'53.952" N; 046°40'46.452" W) at the depth of 76.2 m. This new record increases the geographic distribution of *S. brasiliensis* from State of Pará (Brazil) and expands the knowledge of the crustacean biodiversity in the Amazon Reefs.

Keywords: Amazon River Mouth; Bycatch, Lobster; Northernmost Record; Scyllaridae.

Registro da lagosta sapateira *Scyllarides brasiliensis* Rathbun, 1906 (Decápoda: Scyllaridae) no Grande Sistema de Recifes Amazônicos, Pará, Brasil

RESUMO

A lagosta sapateira *Scyllarides brasiliensis* Rathbun, 1906 (Scyllaridae Latreille, 1825) possui uma ampla distribuição no Oeste do Atlântico, com distribuição disjunta em zonas costeiras entre 20 e 40 m, onde se encontra associada a fundos de cascalho e recifes de corais. Em águas Brasileiras, essa espécie tem sido registrada dos Estados do Maranhão à Bahia e com registros esporádicos nos Estados de São Paulo e Santa Catarina. Baseado nisso, aqui nos reportamos o registro mais ao norte de *S. brasiliensis* no Brasil e sua primeira observação para o Grande Sistema de Recifes Amazônicos (GSRA). Um espécime macho foi coletado através do barco de pesca de lagosta (pesca comercial) no Estado do Pará (01°23'53,952" N; 046°40'46,452" O), na profundidade de 76.2 m. Esse novo registro aumenta a distribuição geográfica de *S. brasiliensis* para o Estado do Pará (Brasil) e expande o conhecimento da biodiversidade de crustáceos para o Sistema de Recifes Amazônicos.

Palavras-chaves: Fauna acompanhante, Foz do Rio Amazonas, Lagosta, Registro mais ao Norte, Scyllaridae.

The lobsters comprise one of the most diverse groups of crustaceans, which occurs in all oceans in a wide range of substrates (gravel, corals and muddy) and covering different depths from the continental shelf to deep zones (SANTOS et al. 2019). The infraorder Achelata Scholtz & Richter, 1995 comprises around of 153 species (fossil and recent groups), allocated in two families: Palinuridae Latreille, 1802, with 12 genera and 62 species, and Scyllaridae Latreille, 1825, with 4 subfamily, 21 genera, 89 species and two subspecies, being the *Scyllarides* Gill, 1898 one of the most diverse genus with 14 valid species (SANTOS; FREITAS, 2002; De GRAVE et al. 2009; CHAN, 2010).

Around the world, lobsters are an important food resource, especially in coastal communities and being responsible by the main income in artisanal fishermen (GIRALDES et al. 2015; DUARTE et al. 2016). In the Brazil, the lobster fishery began in 1950 in State of Pernambuco and posteriorly expanding to the State of Ceará and in now a days being practiced throughout the coast, in some regions with strong supervision of *Instituto Chico Mendes de Biodiversidade - ICMBio* (COELHO, 1962; MOURA, 1962; SANTOS; FREITAS, 2002; GIRALDES et al. 2015). However, with the rise of fisheries activities along the years, the populations of lobster were severely impacted and allocating several species in the red book of endangered species from Brazilian waters (DUARTE et al. 2016; ALENCAR et al. 2020).

Up to date, in the North coast of Brazil between the latitudes 2° N and 4° N, the commercial lobster fishery targets five lobsters' species with economic potential: are the spiny

lobsters *Panulirus echinatus* Smith, 1869, *P. laevicauda* (Latreille, 1817), *P. meripurpuratus* Giraldez & Smyth, 2016, and the slipper lobsters as *Scyllarides delfosi* Holthuis, 1960 (ALENCAR et al. 2020). However, the fishery in this region occurs in the Amazon Reef System (ARS), which contains an undiscovered biodiversity (COLLETTE; RUETZLER, 1977; MOURA et al. 2016). The species of *S. brasiliensis* was described by RATHBUN (1906) from the State of Bahia, however its distribution covers the States of Maranhão to Santa Catarina in continental shelf and associated with coral reefs (HOLTHUIS, 1991; MELO, 1999; SANTANA et al. 2007; DUARTE et al. 2016). Based on that, in this paper we report the first occurrence of *S. brasiliensis* collected as bycatch in commercial fishery on the Amazon Reef System in the State of Pará.

The specimen of *S. brasiliensis* was caught with bamboo traps along the continental shelf in State of Pará, in the Great Amazon Reef System (GARS), by a lobster fishing boat, under the supervision of Center for Research and Management of Fisheries Resources of the North Coast (CEPNOR) (SISBIO Number: 44915-3) (Fig.1). The catch occurred in depths between 16 and 97 m in the year of 2019. According to COLLETTE; RUETZLER (1977) and MOURA et al. (2016) this area has an extensive reef system covering approximately 9.500 km² forming a mesophotic reefs between 70 and 220 m of depth and containing a undiscovered biodiversity. After the sample, the individual was transferred to the Carcinology Laboratory of CEPNOR/IBAMA, preserved in 70% ethyl alcohol and stored in the carcinological collection at *Universidade Federal Rural do Amazonas*.

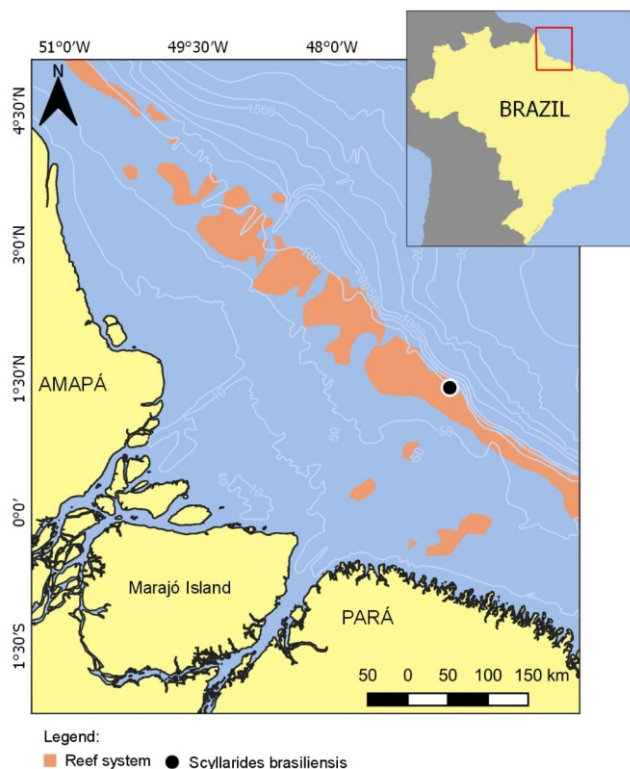


Figure 1. Map showing site (black circle) with the new occurrence of the slipper lobster *Scyllarides brasiliensis* Rathbun, 1906, in the region of the Amazon Reef System.

It was examined one male specimen of *S. brasiliensis* (Fig. 2) from State of Pará (01°23'53.952" N; 046°40'46.452" W), collected in 10.16.2019, associated with the Great Amazon Reef System, at 76.2 m of depth in bottom of sand/gravel and corals fragments. The species of *S. brasiliensis* has a broad distribution along the western Atlantic, however with disjoint records in Antilles, Caribbean Sea, Dominica, West Indies (HOLTHUIS, 1991), while in Brazilian continental shelf these records encompass the States of Pará (present record), Maranhão to Bahia (RATHBUN, 1906; COELHO; RAMOS-PORTO, 1983/85; WILLIAMS, 1986; HOLTHUIS, 1991), São Paulo (RAMOS, 1952; MELO, 1999; DALL'OCCHO et al. 2007) and Santa Catarina (SANTANA et al. 2007; DUARTE et al. 2016). The bathymetric distribution varied from 20-40 meters (HOLTHUIS, 1991; MELO, 1999), but in this study, the specimen expanded the bathymetric range to deep waters (76.2 m).



Figure 2. *Scyllarides brasiliensis* Rathbun, 1906. Male specimen collected as bycatch in Amazon Reef System, located in State of Pará, Brazil.

In the North region, the lobster fisheries cover an area between the States of Pará and Amapá (both on the Amazon continental shelf) (SILVA et al., 2013; ALENCAR et al., 2020), however, the lack of knowledge about the biodiversity of this

region (GARS) creates a risk for the coral reef system, especially for the anthropic impacts as: commercial and industrial fisheries, climates changes and oil exploration in this region. In this aspect, is important the creation of protection and management measures for the conservation and knowledge of this ecosystem. Thus, the currently observation of the slipper lobster *S. brasiliensis* as bycatch fauna, represents the northernmost record of this species in Brazilian waters (State of Pará) and expands knowledge of crustacean biodiversity for the Great Amazon Reef System (GARS).

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